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EXAMINER

ROCHE, TRENTON J

ART UNIT	PAPER NUMBER
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2193

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/732,467	<b>Applicant(s)</b> MARSH ET AL.	
	<b>Examiner</b> Trent J Roche	<b>Art Unit</b> 2193	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-10,12-21,27-29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-10,12-21,27-29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION

1. This office action is responsive to communications filed 24 January 2005.
2. Per applicant's request, amended claims 1, 9, 14, 18, 27, 31 and 32 have been entered. Claims 1, 4-10, 12-21, 27-29 and 31-33 are pending.
3. Claims 1, 4-10, 12-21, 27-29 and 31-33 have been examined.

#### *Claim Rejections - 35 USC § 112*

4. The rejection of claims 31-33 under 35 U.S.C. § 112 2<sup>nd</sup> paragraph has been withdrawn in light of the applicant's amendments.

#### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-8, 14-7 and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,795,912 to Itoh et al, hereafter referred to as Itoh.

#### **Per claim 1:**

Itoh discloses:

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- a computer system communicatively coupled to a network (“communication with a server...” in col. 3 lines 2-3)
- a programmable non-volatile memory (“flash ROM comprising EEPROM...” in col. 8 line 66)
- at least one microprocessor operatively coupled to execute at least one instruction from the programmable non-volatile memory in response to a boot request, the microprocessor configured to controllably write to the programmable non-volatile memory (“When a power switch is turned on, an area of the flash ROM is accessed...” in col. 9 lines 42-43)
- at least one fixed storage device operatively coupled to the at least one microprocessor, the fixed storage device containing a boot image that is configured with appropriate instruction code suited to transition the at least one microprocessor to an operational mode (“the OS switching and booting program can also be installed in the HDD...” in col. 10 lines 44-45)
- wherein the at least one fixed storage device receives and stores a boot memory comprising, a system loader, a configuration file including information that directs the microprocessor to one or more locations within one of the fixed storage devices and a random access memory (“the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 51-56.)
- a firmware patch configured to write a firmware upgrade to the programmable non-volatile memory (“including application program updating the BIOS...” in col. 11 line 25)

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- the firmware patch comprising: an install application; a firmware revision containing at least one instruction different from firmware within the programmable non-volatile memory (“including application program updating the BIOS...” in col. 11 line 25)
- a flash application having a bootable kernel, firmware update logic, and a non-volatile memory interface, wherein the system loader instructs the microprocessor to write the firmware revision to the programmable non-volatile memory (“the boot image file of the second OS...including application program updating the BIOS...” in col. 11 lines 23-25)

substantially as claimed.

**Per claim 4:**

The rejection of claim 1 is incorporated, and further, Itoh discloses at least one fixed storage device receiving and storing new firmware as claimed (“application program updating the BIOS...downloading these binary files into a temporary directory of the second storage unit...” in col. 11 lines 25-32)

**Per claim 5:**

The rejection of claim 1 is incorporated, and further, Itoh discloses at least one fixed storage device receiving and storing an application as claimed (Note the rejection regarding claim 4)

**Per claim 6:**

The rejection of claim 1 is incorporated, and further, Itoh discloses the bootable kernel comprising a system loader interface and reboot logic as claimed (“composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the

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second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 52-56)

**Per claim 7:**

The rejection of claim 6 is incorporated, and further, Itoh discloses a bootable kernel comprising an operating system as claimed (“boot image file of the second OS...” in col. 11 lines 23-24)

**Per claim 8:**

The rejection of claim 6 is incorporated, and further, Itoh discloses a bootable kernel comprising file management system as claimed (“boot image file of the second OS...” in col. 11 lines 23-24. The OS is a file management system.)

**Per claim 14:**

Itoh discloses:

- a computer system communicatively coupled to a network (“communication with a server...” in col. 3 lines 2-3)
- means for accessing data stored on a memory device that retains data when power is removed from the memory device, the accessing means responsive to power being applied to the computer system (“When a power switch is turned on, an area of the flash ROM is accessed...” in col. 9 lines 42-43)
- means for writing to the memory device in response to a remote input designated to initiate the replacement of the data stored in the memory device, wherein the new data to be stored, a configuration file, and a bootable kernel are stored on a fixed storage device within the

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computer system in response to the remote input (“a user of the computer system starting browsing software...for download that is provided by a server.” In col. 10, lines 59-61.

Further, “downloading these binary files into a temporary directory of the secondary storage unit...” in col. 11 lines 30-32)

- the bootable kernel comprising a system loader interface and reboot logic (“composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 52-56)
- the configuration file including information that directs the computer system to one or more locations within the memory device (“the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 51-56.)

substantially as claimed.

**Per claim 15:**

The rejection of claim 14 is incorporated, and further, Itoh discloses a programmable non-volatile memory as claimed (“flash ROM comprising EEPROM...” in col. 8 line 66)

**Per claim 16:**

The rejection of claim 14 is incorporated, and further, Itoh discloses means for storing an operating system and a file management system on the fixed storage device (Note rejections regarding claims 7

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and 8) and means for modifying an initial system loader address in response to the remote input as claimed (Note Figure 5 and the corresponding sections of the disclosure)

**Per claim 17:**

The rejection of claim 15 is incorporated, and further, Itoh discloses an electrically erasable programmable read only memory as claimed (Note the rejection regarding claim 15)

**Per claim 27:**

Itoh discloses:

- a computer system communicatively coupled to a network (“communication with a server...” in col. 3 lines 2-3)
- a programmable non-volatile memory having a first firmware (“flash ROM comprising EEPROM...” in col. 8 line 66)
- at least one microprocessor operatively coupled to controllably write to the programmable non-volatile memory and execute at least one instruction from the programmable non-volatile memory in response to a boot request (“When a power switch is turned on, an area of the flash ROM is accessed...” in col. 9 lines 42-43)
- at least one fixed storage device operatively coupled to the at least one microprocessor, the storage device containing a firmware patch (“application program updating the BIOS...downloading these binary files into a temporary directory of the second storage unit...” in col. 11 lines 25-32)
- a patch memory map comprising an index that identifier the location of and directs the computer system to execute instructions stored at one or more locations, the instructions



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forming an install application, a second firmware different from the first firmware, and a flash application comprising a bootable kernel including a system loader interface and reboot logic, a firmware update logic, and a non-volatile memory interface (“the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 51-56. Further, “the boot image file of the second OS...including application program updating the BIOS...” in col. 11 lines 23-25. A patch memory map is inherently contained in the image file.)

- wherein the flash application instructs a system loader via the system loader interface to select the bootable kernel upon receipt of a boot request (Note Figure 5 and the corresponding sections of the disclosure)

substantially as claimed.

**Per claim 28:**

The rejection of claim 27 is incorporated, and further, Itoh discloses a system loader executing the flash application as claimed (“when the second OS is booted, the predetermined application program is loaded...and predetermined processing...BIOS update...is performed...” in col. 16 line 66 to col. 17 line 4)

**Per claim 29:**

The rejection of claim 27 is incorporated, and further, Itoh discloses the firmware update logic and the non-volatile memory interface storing the second firmware on the non-volatile memory as

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claimed ("update of the BIOS is necessary" in col. 18 line 42. The BIOS update would occur on the same Flash ROM.)

**Per claim 31:**

The rejection of claim 27 is incorporated, and further, Itoh discloses transferring an operating system to a random access memory communicatively coupled to the at least one microprocessor as claimed ("the boot image of the first OS is loaded form the HDD 40 to the main storage unit..." in col. 10 lines 20-21)

**Per claim 32:**

The rejection of claim 27 is incorporated, and further, Itoh discloses the install application executing a file system operation as claimed (Note col. 11 lines 21-36)

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 9, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,795,912 to Itoh et al, hereafter referred to as Itoh, in view of U.S. Patent 6,718,373 to Bearden et al, hereafter referred to as Bearden.

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**Per claim 9:**

Itoh discloses:

- a computer system communicatively coupled to a network infrastructure (“communication with a server...” in col. 3 lines 2-3)
- the computer system configured with a non-volatile memory containing a common firmware version designated for replacement (“flash ROM comprising EEPROM...” in col. 8 line 66)
- a fixed storage device containing a boot image having appropriate instruction code suited to transition the respective computer system to an operational mode (“composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 52-56)
- a user input device communicatively coupled to at least one computer system communicatively coupled to the network infrastructure (“downloaded by a user of the computer system starting browsing software...” in col. 10 lines 59-60)
- the at least one computer system configured with write access permission for the respective fixed storage device associated with the computer system, wherein an input from the user input device initiates a transfer of a patch memory map and a firmware upgrade patch to the computer system (“the OS switching and booting program is downloaded from the server to the computer system as a binary file when the user selects...” in col. 11 lines 4-6. A patch memory map is inherently contained in the image file.)
- the firmware upgrade patch comprising a bootable kernel different from an operating system operable on the respective computer system (“boot image file of the second OS...” in col. 10 line 54)

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- the patch memory map comprising information that directs the computer system to one or more locations within the memory device (“the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 51-56.)

substantially as claimed. Itoh does not explicitly disclose a plurality of computer systems receiving the updated software. Bearden discloses in an analogous software updating and installation system distributing software to a plurality of computer systems via a network (Note Figure 1 and the corresponding sections of the disclosure). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of client computer systems to the system disclosed by Itoh, which already describes a computer system communicatively coupled to a network, as this would allow a user to utilize a single server per client computer, as shown in Bearden, thereby reducing server costs.

**Per claim 10:**

The rejection of claim 9 is incorporated, and further, Itoh discloses instruction code necessary to support replacement of the common firmware version as claimed (“when the second OS is booted, the predetermined application program is loaded...and predetermined processing...BIOS update...is performed...” in col. 16 line 66 to col. 17 line 4)

**Per claims 12 and 13:**

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The rejection of claim 9 is incorporated, and further, note the rejections regarding claims 7 and 8, respectively.

9. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,795,912 to Itoh et al, hereafter referred to as Itoh, in view of U.S. Patent 6,718,373 to Bearden et al, hereafter referred to as Bearden, further in view of U.S. Patent 5,878,256 to Bealkowski et al, hereafter referred to as Bealkowski.

**Per claim 18:**

Itoh discloses:

- a method for performing a firmware upgrade (“when the second OS is booted, the predetermined application program is loaded...and predetermined processing...BIOS update...is performed...” in col. 16 line 66 to col. 17 line 4)
- delivering a firmware install patch containing firmware, an install application, and a flash application to a boot disk within a networked computer system, said computer system having a firmware version designated for the firmware upgrade wherein the flash application comprises a bootable kernel, firmware update logic, and a non-volatile memory interface (“composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 52-56. Further, “the boot image file of the second OS...including application program updating the BIOS...” in col. 11 lines 23-25. Further, “application program updating the

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BIOS...downloading these binary files into a temporary directory of the second storage unit..." in col. 11 lines 25-32)

- initiating an install application contained within the firmware install patch, said install application containing instructions suited to perform the firmware upgrade ("when the second OS is booted, the predetermined application program is loaded...and predetermined processing...BIOS update...is performed..." in col. 16 line 66 to col. 17 line 4)
- modifying an initial system loader in response to the install application to direct a microprocessor to execute instructions identified by one or more memory locations identified within the configuration file upon a subsequent microprocessor reset input (Note Figure 5 and the corresponding sections of the disclosure. Further, "the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed..." in col. 10 lines 51-56.)
- initiating a microprocessor reset input in response to the install application that loads a plurality of instructions in accordance with the boot image (Note Figure 5 and the corresponding sections of the disclosure)
- writing the new firmware to the networked computer system in response to the install application ("when the second OS is booted, the predetermined application program is loaded...and predetermined processing...BIOS update...is performed..." in col. 16 line 66 to col. 17 line 4)

substantially as claimed. Itoh does not explicitly disclose a plurality of computer systems receiving the updated software. Bearden discloses in an analogous software updating and installation system

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distributing software to a plurality of computer systems via a network (Note Figure 1 and the corresponding sections of the disclosure). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plurality of client computer systems to the system disclosed by Itoh, which already describes a computer system communicatively coupled to a network, as this would allow a user to utilize a single server per client computer, as shown in Bearden, thereby reducing server costs.

Further, while Itoh does disclose updating the firmware, Itoh does not explicitly disclose erasing the firmware in response to the install application. Bealkowski discloses in analogous firmware updating system the steps of erasing the firmware in response to an update ("The update utility program erases the old firmware code..." in col. 14 lines 29-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the firmware erasing ability of Bealkowski with the firmware updating system of Itoh, as a complete erasure of the firmware would ensure that no erroneous firmware is left after the firmware update.

**Per claim 19:**

The rejection of claim 18 is incorporated, and further, Itoh discloses a network data transfer as claimed ("the OS switching and booting program is downloaded from the server to the computer system as a binary file when the user selects..." in col. 11 lines 4-6)

**Per claim 20:**

The rejection of claim 18 is incorporated, and further, Itoh discloses the firmware install patch comprising a boot image that contains an operating system, a file manager, and at least one

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executable configured to verify the version of the firmware stored in the computer system prior to writing the new firmware as claimed (“composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” in col. 10 lines 52-56. Further, “the boot image file of the second OS...including application program updating the BIOS...” in col. 11 lines 23-25. Further, “application program updating the BIOS...downloading these binary files into a temporary directory of the second storage unit...” in col. 11 lines 25-32. Finally, “verifies a...BIOS version...and judges that the update of the BIOS is necessary” in col. 18 lines 40-42)

**Per claim 21:**

The rejection of claim 18 is incorporated, and further, Itoh discloses installing an operating system that requires the new firmware, installing a software patch that requires the new firmware, redirecting the initial system loader to select the appropriate memory address upon subsequent microprocessor reset inputs to apply the updated firmware, operating system, and software patch, and removing the firmware install patch from the computer system as claimed (Note Figure 5 and the corresponding sections of the disclosure.)

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,795,912 to Itoh et al, hereafter referred to as Itoh, in view of U.S. Patent 5,878,256 to Bealkowski et al, hereafter referred to as Bealkowski.

**Per claim 33:**



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The rejection of claim 32 is incorporated, and further, while Itoh does disclose updating the firmware, Itoh does not explicitly disclose removal of the firmware patch. Bealkowski discloses in analogous firmware updating system the steps of erasing the firmware in response to an update (“The update utility program erases the old firmware code...” in col. 14 lines 29-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the firmware erasing ability of Bealkowski with the firmware updating system of Itoh, as a complete erasure of the firmware would ensure that no erroneous firmware is left after the firmware update.

### *Response to Arguments*

11. Applicant's arguments filed 24 January 2005 have been fully considered but they are not persuasive.

#### **Per claims 1, 4-8, 14-17 and 27-29:**

The applicants states that Itoh does not disclose, teach, or reasonably suggest the newly added limitation of a configuration file including information that directs the microprocessor to one or more locations within one of the fixed storage device and a random access memory (claim 1).

Similar limitations are recited in independent claims 14 and 27. In response, it is noted in col. 10 lines 47-57 teaches receiving information for booting the second OS. Specifically, “the information for booting the second OS is composed of a boot image file of the second OS, device drivers, and a secondary storage unit I/O patch program. The boot image file of the second OS includes a second OS loader, a body of the second OS, and a predetermined application to be executed...” As the embodiment disclosed by Itoh is capable of booting the second OS, then the information in the recited portion must inherently direct the microprocessor to one or more locations within one of the

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fixed storage device and a random access memory, otherwise the second OS would never be loaded and executed. If the configuration files for the second OS were never to direct the microprocessor to one or more locations within one of the fixed storage device and random memory, then the system would never operate. In Itoh, it is clearly shown that the second OS is utilized, and as such, Itoh anticipates the newly added limitations. For these reasons, the rejections of claims 1, 14, 27, and their respective dependent claims are proper and maintained.

**Per claims 9, 10, 12, 13 and 18-21:**

The applicant states that Itoh does not disclose, teach, or reasonably suggest the newly added limitations regarding information that directs a computer system to execute instructions stored at one or more locations. (claim 9) Similar limitations are recited in independent claim 18. As was shown above regarding the rejection of claim 1, Itoh does disclose information which directs a computer system to execution instructions stored at one or more locations, and as such, the rejections are maintained. (Note remarks pertaining to claims 1, 4-8, 14-17 and 27-29 above) Furthermore, the applicant fails to show that the reasons to combine and motivations concerning the rejections of claims 9, 10, 12, 13 and 18-21 are improper. For these reasons, the rejections of claims 9, 10, 12, 13 and 18-21 are proper and maintained.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trent J Roche whose telephone number is (571) 272-3733. The examiner can normally be reached on Monday - Friday, 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Trent J Roche  
Examiner  
Art Unit 2193

TJR

  
**KAKALI CHAKI**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**